

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A network including at least a router device, including wherein the router device comprises:

a plurality of network interfaces for connection to an outside, and

routing processing means for performing routing processing for a packet received through at least one of said network interface-interfaces on the basis of route information stored in advance, ~~characterized in that~~

~~said router device comprises a plurality of~~ virtual interfaces which manage a change in a link state of at least one of said network interfaces, wherein said link state is one of state of a link

~~for connection to the outside in accordance with an up state in which~~ there is a continuous connection ~~continues~~ for not less than a first predetermined time, a down state in which there is a continuous disconnection ~~continues~~ for not less than a second predetermined time, and a hit state in which ~~the connection and the disconnection repeat~~ a connection and a disconnection repeatedly occur while remaining in the hit state.

2. (currently amended): A network according to claim 1, ~~characterized in that~~wherein said virtual interfaces are arranged between said network interfaces and said routing processing means so as to respectively correspond to said plurality of network interfaces, and wherein at least one of said virtual interfaces conceals ~~conceal~~ a state of at least one of said network interfaces from said routing processing means.

3. (currently amended): A network according to claim 1, ~~characterized in that~~wherein at least one of said virtual interfaces suppress updating of the route information when the link is in the hit state.

4. (currently amended): A network according to claim 1, wherein at least one of said virtual interfaces suppress notification of a change in the state of the link to another router device when the link is in the hit state.

5. (currently amended): A router device comprising

a plurality of network interfaces for connection to an outside, and

routing processing means for performing routing processing for a packet received
through at least one of said network ~~interface-interfaces~~ on the basis of route information stored
in advance, ~~characterized by comprising~~

a plurality of virtual interfaces which manage a change in a link state of at least one of said network interfaces, wherein said link state is one of an up state in which there is a continuous connection for not less than a first predetermined time, a down state in which there is a continuous disconnection for not less than a second predetermined time, and a hit state in which a connection and a disconnection repeatedly occur while remaining in the hit state.

~~virtual interfaces which manage a change in state of a link for connection to the outside in accordance with an up state in which connection continues for not less than a predetermined time, a down state in which disconnection continues for not less than a predetermined time, and a hit state in which the connection and the disconnection repeat.~~

6. (currently amended): A router device according to claim 5, ~~characterized in that~~wherein said virtual interfaces are arranged between said network interfaces and said routing processing means so as to respectively correspond to said plurality of network interfaces, and wherein at least one of said virtual interfaces conceals ~~conceal~~ a state of at least one of said network interfaces from said routing processing means.

7. (currently amended): A router device according to claim 5, wherein at least one of said virtual interfaces suppress updating of the route information when the link is in the hit state.

8. (currently amended): A router device according to claim 5, ~~characterized in that~~wherein at least one of said virtual interfaces suppress notification of a change in the state of the link to another device when the link is in the hit state.

9. (currently amended): A route updating suppression method for a network ~~including comprising of~~ at least a router device ~~including wherein the router device comprises: a~~ plurality of network interfaces for connection to an outside, and routing processing means for performing routing processing for a packet received through at least one of said plurality of network interface on the basis of route information stored in advance, ~~characterized by the~~ method comprising:

the step of recognizing any one of an up state in which there is a continuous connection for not less than a first predetermined time, a down state in which there is a continuous disconnection for not less than a second predetermined time, and a hit state in which a connection and a disconnection repeatedly occur while remaining in the hit state~~an up state indicating a state in which connection to the outside continues for not less than a predetermined time, a down state in which disconnection continues for not less than a predetermined time, and a hit state in which the connection and the disconnection repeat,~~ on the side of a plurality of virtual interfaces arranged between ~~the~~said network interfaces and the routing processing means so as to respectively correspond to the plurality of network interfaces; and

the step of managing a change in state of a link for connection to the outside in accordance with a recognition result.

10. (currently amended): A route updating suppression method according to claim 9, ~~characterized by further comprising the~~ a step of causing at least one of said ~~the~~ virtual interfaces to conceal a state of at least one of said ~~the~~ network interfaces from the routing processing means.

11. (currently amended): A route updating suppression method according to claim 9, ~~characterized by further comprising the~~ a step of causing at least one of said ~~the~~ virtual interfaces to suppress updating of the route information when the link is in the hit state.

12. (currently amended): A route updating suppression method according to claim 9, ~~characterized by further comprising the~~ step of causing at least one of said ~~the~~ virtual interfaces to suppress notification of a change in state of the link to another router device when the link is in the hit state.

13. (currently amended): A computer readable media having a computer program encoded therein for a route updating suppression method for a network including at least a router device including a plurality of network interfaces for connection to an outside, and routing processing means for performing routing processing for a packet received through at least one of

said network ~~interface~~ interfaces on the basis of route information stored in advance, ~~the said~~
program ~~being used to execute~~ comprising:

the step of recognizing any one of an up state in which there is a continuous connection
for not less than a first predetermined time, a down state in which there is a continuous
disconnection for not less than a second predetermined time, and a hit state in which a
connection and a disconnection repeatedly occur while remaining in the hit state ~~an up state~~
~~indicating a state in which connection to the outside continues for not less than a predetermined~~
~~time, a down state in which disconnection continues for not less than a predetermined time, and a~~
~~hit state in which the connection and the disconnection repeat~~, on the side of a plurality of virtual
interfaces arranged between the said network interfaces and the routing processing means so as
to respectively correspond to the plurality of network interfaces; and

the step of managing a change in state of a link for connection to the outside in
accordance with a recognition result.

14. (new): The network of claim 1, wherein the state of a link remains in the hit state
until a connection or disconnection occurs for at least said first predetermined time or said
second predetermined time respectively.

15. (new): The network of claim 1, wherein the router device notifies another routing
device that it is in the hit state.

16. (new): The network of claim 1, wherein at least one of said virtual interfaces notifies a change in the state of a link of at least one of said network interfaces to said routing processing means if either the up state or the down state occur.

17. (new): The router device of claim 5, wherein the state of a link remains in the hit state until a connection or disconnection occurs for at least said first predetermined time or said second predetermined time respectively.

18. (new): The router device of claim 5, wherein the router device notifies another routing device that it is in the hit state.

19. (new): The router device of claim 5, wherein at least one of said virtual interfaces notifies a change in the state of a link of at least one of said network interfaces to said routing processing means if either the up state or the down state occur.

20. (new): The route updating suppression method of claim 9, wherein the state of a link remains in the hit state until a connection or disconnection occurs for at least said first predetermined time or said second predetermined time respectively.

21. (new): The route updating suppression method of claim 9, wherein the router device notifies another routing device that it is in the hit state.

22. (new): The route updating suppression method of claim 9, wherein at least one of said virtual interfaces notifies a change in the state of a link of at least one of said network interfaces to said routing processing means if either the up state or the down state occur.

23. (new): The computer readable media of claim 13, wherein the program further comprises a step of maintaining the state of a link in the hit state until a connection or disconnection occurs for at least a first predetermined time or a second predetermined time respectively.

24. (new): The computer readable media of claim 13, wherein the program further comprises a step of notifying another routing device that it is in the hit state.

25. (new): The computer readable media of claim 13 wherein the program further comprises a step of notifying a change in the state of a link of at least on of said network interfaces to said routing processing means if either the up state or the down state occur.